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ABSTRACT

Many of the schools in regional and inland areas of Australia find it difficult to attract and maintain quality and experienced staff, as do some of the more difficult to teach in schools in urban areas. To help overcome these problems Tasmania has instituted a transfer policy for state school teachers, as had other Australian state systems. However, little research has been conducted into the impact of transfer between schools on teachers' work lives, both professional and personal. This paper looks at the impact of transfer on teaching and the problems raised for an expert teacher in changing from one school context to another in the middle of a school year. After a review of relevant literature, a model of "the expert teacher" is developed and used to confirm that this teacher fitted the prototype of expert teacher. Then, the impact of the transfer on this teacher's quality of teaching, knowledge of content and pedagogy, skills and abilities, and personal attributes is described. The paper concludes that the transfer had a mostly vitiating effect on his teaching during the remaining two terms of the school year, noting that his expertise returned gradually as he began the next school year. Contains 11 references. (ND)

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ED 401 226

Expert Teachers in Transition: An exercise in vitiation or renascence?

A Case Study of One

by

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The transfer of teachers between schools is a perpetual issue in Australian education systems. Australia is a large country with a low population concentrated in coastal cities. As such, many of the schools in regional and inland areas of Australia find it difficult to attract and maintain quality and experienced staff, as do some of the more difficult to teach in schools in urban areas. To help overcome these problems, most state education systems have instituted a transfer policy for state school teachers, Tasmania only recently. However, little research has been conducted into the impact of transfer between schools on teachers' work lives, both professional and personal. What are the consequences of transferring teachers between schools? Will it be a renascent, renewing, revitalising, refreshing, positive experience for them, or will it be a vitiating, lessening, relapsing, waning, negative experience for them?

In this paper I will be considering the impact of transfer on the teaching of one expert teacher, Peter[1]. My work is ongoing and is based on a proposition and a statement made by David Berliner. In comparing expert teachers with novice teachers, Berliner proposed, "Experts excel mainly in their own domain and in particular contexts" and subsequently suggested, "and this raises problems for transfer" (1994, p168). How, if at all, does changing from one school context to another raise problems for an expert teacher?

First, I will review literature in the area of teacher expertise. From this I will develop a model of 'the expert teacher'. Third, I will demonstrate how the model of the expert teacher can be used to confirm Peter's expert status. Fourth, I will describe how the transfer has impacted on Peter's teaching. In conclusion, I present a summary of how Peter's transfer has had a mostly vitiating effect on his teaching, at least initially.

Teacher Expertise

Based on his work and that of colleagues, David Berliner outlined five stages in the development of teacher expertise: novice, advanced beginner, competent, proficient and expert (Berliner, 1994). I term this the novice to expert continuum of teacher expertise. Teachers at the novice stage of the continuum were described by Berliner as deliberate; advanced beginner teachers as insightful; competent teachers as rational; proficient teachers as intuitive; and expert teachers as arational. By arational, Berliner meant:

> *Experts have both an intuitive grasp of the situation and seem to sense in nonanalytic and non-deliberative ways the appropriate response to be made. They show fluid performance.* (1994, p166).

The distinctions Berliner made between each of these stages were not clearly defined in terms of teaching practice. Where one stage ends and the other begins often is blurry as Berliner's work largely focused on the differences between novices and experts, not between each of the stages. Accordingly, Berliner's twelve propositions about teacher expertise, the last four tentative, simply distinguish between experts and novices.

1. Experts excel mainly in their own domain and in particular contexts.
2. Experts often develop automaticity for the repetitive operations that are needed to accomplish their goals.
3. Experts are more sensitive to the task demands and social situation when solving problems.
4. Experts are more opportunistic and flexible in their teaching than are novices.
5. Experts represent problems in qualitatively different ways than do novices.
6. Experts have fast and accurate pattern recognition capabilities.
7. Experts perceive meaningful patterns in the domain in which they are experienced.
8. Experts may begin to solve problems slower, but they bring richer and more personal sources of information to bear on the problem that they are trying to solve.
9. Experts make substantially more inferences from and assumptions about the information presented to them.
10. Experts are more evaluative.

11. Experts attend more to the atypical or unique events than to the typical or ordinary events in the domain in which they have expertise.
12. Experts appear to be more confident about their abilities to succeed at instructional tasks.

Berliner (1994) also noted that the concepts of attention, work, responsibility, affect and individual differences had particular saliency among expert teachers compared with novice teachers.

As these propositions only compare novices and experts, to what extent an advanced beginner, competent or proficient teacher holds to each of these is open to debate. Typically, it is probable that each of the characteristics outlined in the propositions is gradually developed by a teacher as they move along the continuum from novice to expert. However, this is not something that occurs automatically with experience. The novice to expert continuum is not necessarily linear (Berliner, 1994); teachers can progress at different rates and their movement through the stages can involve loops, U-turns, oscillations and stasis. Additionally, not all teachers reach all of the stages, in fact some never progress further than advanced beginner (Berliner, 1994).

Leinhardt (1986) also compared experts to novices when investigating what makes an expert elementary maths teacher expert. Leinhardt found:

> *Experts are unusually good at constructing series of lessons that successfully transmit the content that needs to be learned. Their lessons are clear, accurate, and rich in example and demonstration of a particular piece of math. The expert teacher presents this new material within a coherent but flexible lesson structure. Both the lesson structure and the content presentation are critical. Further, these lessons take place in an academic environment that focuses on the specifics that students are expected to learn.* (Leinhardt, 1986, p29)

Leinhardt, as did Berliner, also emphasised the importance of establishing routines to aid lesson delivery; experts did this well, novices not very well. Similarly, Leinhardt stressed the importance of good management of lessons, which experts excelled at, since, "if there is inadequate time to teach or if the students are not paying attention, it doesn't matter how good the lesson is" (Leinhardt, 1986, p33).

Borko & Livingston (1989) also investigated differences between novice and expert maths teachers. Their study integrated two conceptual frameworks; the first considered teaching as a complex cognitive skill and the second described teaching as improvisational performance. Borko & Livingston found:

> *... the success of the expert teachers' improvisation seemed to depend on their ability to quickly generate or provide examples and to draw connections between students' comments or questions and the lesson's objectives. In terms of cognitive structure, successful improvisational teaching requires that the teacher have an extensive network of interconnected, easily accessible schemata. Further, he or she must have the ability to select particular strategies, routines, and information from these schemata during actual teaching and learning interactions, based on specific classroom occurrences.* (1989, p485)

Borko & Livingston's study supported many of the findings of Berliner and Leinhardt, and other researchers of pedagogical expertise. However, they noted:

> *There is much left to learn about the nature of pedagogical expertise and differences between expert and novice teachers. In particular, we know little about the process by which novices become experts. Most investigations of pedagogical expertise have compared experts and novices at a single point in time or over a period of weeks or months.* (Borko & Livingston, 1989, p495)

Bullough (1995) is one of the few researchers who has looked at the transition of a teacher from novice to expert, through the stages of advanced beginner, competent and proficient. He believed, as did Bereiter & Scardamalia (1993), that "expertise is more a process than an end state" and that "experts work at the upper edge of their competence; they push boundaries ever outward" (p461). Accordingly, with reference to the development of expertise in general, Ericsson & Charness stated:

> *... individuals improve their performance and attain an expert level, not as an automatic consequence of more experience with an activity but rather through structured learning and effortful adaptation.* (1994, p731)

Teachers need to be continually extending their boundaries if they are to develop expertise as a teacher (Bereiter & Scardamalia, 1993; Bullough, 1995). As Sternberg & Horvath stated:

> *... whereas novices and experienced nonexperts seek to reduce problems to fit available methods, true experts seek progressively to complicate the picture, continually working on the leading edge of their own knowledge and skill.* (1995, p13)

However, teacher expertise is not an end state, it is fluid and dependent upon many variables, including the context of the teaching (Berliner, 1994; Bullough, 1995; Sternberg & Horvath, 1995). Bullough concurred with Berliner when he stated, "Having once shown expertise in teaching does not mean that one will continue to demonstrate expertise, especially in a new setting" (1995, p474). A teacher who has demonstrated expertise at one point in their career, may not necessarily continue to do so due to changes in their work; for example, administrative or contextual.

Working from an educational psychology framework, Sternberg & Horvath suggested a prototype model of the expert teacher. They argued:

> *... by viewing teaching expertise as a prototype, we can distinguish experts from experienced nonexperts in a way that acknowledges (a) diversity in the population of expert teachers, and (b) the absence of a set of individually necessary and jointly sufficient features of an expert teacher.* (1995, p14)

Acknowledging the diversity in the population of expert teachers is important since, "Although expert teachers do many of the same things well, they do not necessarily do them in the same way" (Leinhardt, 1986, p33).

Sternberg & Horvath considered three basic ways in which experts differ from novices: domain knowledge, efficiency of problem solving, and insight. Regarding domain knowledge, Sternberg & Horvath stated:

> *... the prototype expert teacher is knowledgeable. He or she has extensive, accessible knowledge of subject matter and of teaching per se, the protoype expert has knowledge of the political and social context in which teaching occurs. This knowledge allows the prototype expert to adapt to practical constraints in the field of teaching - including the need to become recognized and supported as an expert teacher.* (1995, p12)

Sternberg & Horvath split domain knowledge into several categories: content knowledge; pedagogical knowledge; and practical knowledge. Pedagogical knowledge was further split into content-specific and content-non-specific knowledge; practical knowledge was further split into explicit and tacit knowledge.

Regarding efficiency of problem solving, Sternberg & Horvath stated:

> *... the protoype expert teacher is efficient in solving problems within the domain of teaching. By virtue of his or her extensive experience, the prototype expert is able to perform many of the constituent activities of teaching rapidly and with little or no cognitive effort. This routinized skill enables the prototype expert to devote attention to high-level reasoning and problem solving in the domain of teaching. In particular, the prototype expert is planful and self-aware in approaching problems - he or she does not jump into solution attempts prematurely.* (1995, p13)

Efficiency (of problem solving) was split into the categories of: automatization; executive control and reinvestment of cognitive resources. Executive control was further split into planning, monitoring and evaluating. This feature concurred with Berliner's propositions (1), (2), (6), (7), (8), and (9).

Regarding insight, Sternberg & Horvath stated:

> *... the prototype expert teacher is insightful in solving problems within the domain of teaching. He or she is able to identify information that is promising with respect to a problem solution and is able to combine that*

> *information effectively. The prototypical expert is able to reformulate his or her representation of the problem at hand through a process of noticing, mapping, and applying analogies. Through processes such as these, the expert teacher is able to arrive at solutions to problems in teaching that are both novel and appropriate (Sternberg & Lubart, 1995).* (1995, p14)

Sternberg & Horvath split insight into the three categories of: selective encoding; selective combination; and selective comparison. This feature concurred with Berliner's propositions (5), (6), (7) and (9).

Sternberg & Horvath's prototype is useful, but lacks inclusion of the more personal sides of teaching, including student-teacher relationships. Rollett (1992), in her study of expert teachers, emphasised the personal aspects of teaching, including the relationship a teacher develops with their students. She found, *inter alia*, expert teachers:

(a) had a personal, child-centred way of interaction with their students;

(b) had a positive self-image;

(c) were interested in the extra challenges, not the routines of teaching;

(d) relied on a large repertoire of strategies and skills they could call on automatically; and

(e) strove to improve themselves both personally and professionally.

Points (b) to (e) concur with the findings of Berliner, (1994), Bullough (1995), and Sternberg & Horvath (1995) presented earlier.

Williamson (1994) in his study on quality teaching also considered the personal aspects of teaching important. He identified five characteristics of quality teaching[2]: curriculum and content knowledge; pedagogic skill; reflection; empathy (with both students and colleagues); and managerial competence (both administrative and behavioural). Three components of Williamson's (1994) model of teacher quality, student-teacher relationships, teacher-teacher relationships and behaviour management were not identified in Sternberg & Horvath's prototype of the expert teacher. Additionally, Sternberg & Horvath combined the dimensions of content and curriculuim knowledge with pedagogic skill to form the knowledge category. However, they did recognise the importance of reflection.

> *The current popularity of "reflective practice" as a touchstone for teacher excellence suggests that, in the minds of many, the disposition toward reflection is central to expert teaching.* (1995, p15)

There is much overlap between the findings of Berliner, Borko & Livingston, Bullough, Leinhardt, Sternberg & Horvath, Rollett and Williamson; in the next section I will attempt to integrate these findings into an expanded prototype model of the expert teacher.

A Model of the Expert Teacher

Ericcson & Charness (1994) stated:

> *... researchers cannot seek out experts and simply assume that their performance on relevant tasks is superior; they must instead* ***demonstrate*** *this superior performance.* (p732) (my emphasis)

Using a prototype model of an expert teacher, researchers will be able to demonstrate the expertise of teachers considered expert by comparing them to the prototype. In the past, researchers have, *inter alia*, simply asked, for example, Principals and colleagues which teachers they considered to be expert (for example, Berliner *et al*, 1988; Borko & Livingston, 1989; Leinhardt, 1986), or considered student outcomes (for example, Leinhardt, 1986). These methods are not rigourous enough, especially if the differences between, say, proficient and expert teachers are to be investigated as compared to the differences between novice and expert teachers. Additionally, with further investigation of the differences between the stages of proficient and expert, the expert prototype can be further modified. A future research aim may be to develop a prototype of each stage along the novice to expert continuum. Berliner and Bullough have begun this process, but it needs to be augmented.

The prototype model also allows, as mentioned before, the diversity of expert teachers to be accounted for. This is essential in a field such as teaching which is highly individualistic, especially at the expert level (Bullough, 1995; Leinhardt, 1986; Sternberg & Horvath, 1995).

In table 1, an extended prototype model of the expert teacher is outlined. This model is based on the research reviewed in the previous section; it combines data from Leinhardt (1986), Borko & Livingston (1989), Rollett (1992), Berliner (1994), Williamson (1994), Bullough (1995), and Sternberg & Horvath (1995).

Table 1: An Extended Prototype Model of the Expert Teacher

DIMENSION	SUB-DIMENSION	FEATURES
Knowledge	Content Knowledge (pure and applied)	Domain specific/specialised; extensive; accessible; meaningful patterns perceived
	Curriculum Knowledge	Domain and context specific; extensive
	Pedagogical Knowledge (content specific & content non-specific)	Extensive; accessible; up-to-date; applied/realistic; problematic concepts understood; appropriate demonstrations
	Practical Knowledge (explicit & tacit)	Administrative; political; social
Skills/Abilities	Pedagogy	Work focused; routines established; individual differences considered; flexible; fluid; improvisational performance; learning supported; clear and coherent lesson structures; learning time maximised; mind-map of lesson (mental schemata); connections/links made; confident; opportunistic
	Management (administrative and behavioural)	Routines established; practical constraints accommodated; expectations/reputation established; task demand sensitivity; fluid
	Reflection/Problem Solving	Informed by experience; intuitive; fast and accurate pattern recognition capabilities; bring rich and personal information to bear; efficient; insightful; novel and appropriate solutions to problems found
Personal Attributes	Attitude/Disposition	Challenges sought; confident; satisfied with career; work at boundaries; positive self-image; high standards set; atypical attended to
	Relationships (with students, colleagues, parents, administrators)	Respectful; empathic; social situations sensitivity; fair; unprejudiced; personal responsibility emphasised

As with Sternberg & Horvath's prototype, this extended prototype needs to be validated and possibly modified. Also, it needs to be determined whether some of these dimensions and/or sub-dimensions are more important than others in determining teacher expertise. For the moment, however, this extended prototype will be used to verify the status of Peter as an expert teacher.

As part of my research, I am conducting case studies of seven Maths/Science secondary teachers who transferred between schools either during 1995 or at the end of 1995[3]. I have observed all of these teachers before their transfer, but so far have only been able to observe Peter to any large degree after

transfer (as he transferred during 1995). My case studies involve, both before and after transfer: interviews with the teachers; shadowing of them throughout 3 or 4 school days, including observations of their classes; administration of classroom environment surveys to the students in each of the teachers' classes; and completion of daily teacher logs by the participants which indicate how much time they spend on different activities. The interviews are aimed at determining how the teacher is coping with the transfer and what impact it is having on their teaching. The observations give me an opportunity to determine the expertise level of the teachers and to validate their own perceptions. In this paper, I will concentrate on Peter as I have observed him before transfer, immediately after transfer and several times in the year since then, and Peter fits the prototype of an expert teacher.

How Peter Fits the Prototype?

From my first observations I received the impression that Peter was an expert teacher[4]. In the following paragraphs I will outline why I thought Peter was an expert teacher, according to the extended prototype model of the expert teacher I have developed. The examples and quotes for this are all drawn from my observations of Peter at Koala High School, before transfer (9-11 May, 1995). I will address each of the dimensions of the model separately.

Knowledge

Peter is very knowledgeable about his main content area, Mathematics, and his secondary content area, Science. Peter completed a 3 year Bachelor of Science degree before completing his 1 year Diploma of Education. He has taught Maths and Science at high school level for nearly 10 years now and has an extensive understanding of the principles of both subjects, and their applications in real life. His knowledge of curricula is also extensive, but context specific to the Tasmanian state education system and Koala High School in particular. Peter's knowledge of the Koala High School 7/8 Maths curricula is particularly extensive because he has been working on developing a new 7/8 Maths programme over the last few years. This has also extended his pedagogical knowledge mainly with respect to Maths, but also in a broader sense. Peter's pedagogical knowledge is up-to-date; in the process of developing the 7/8 Maths programme he has been involved in professional development and professional reading in this area. He also developed a wealth of practical demonstrations which he uses to augment his teaching, to provide concrete examples and demonstrate the applied nature of Maths and Science.

In accordance with his adherence to the principles of constructivism, Peter consciously attempts to present this knowledge in context to his students. For example, I observed two lessons with Peter's grade 10 Maths, a top level class. These lessons were in preparation for introducing factorisation of trinomials, a pure area of mathematics. Peter wanted to give the students some context and background to this algebraic manipulation. In the first lesson, after a 10 minute introduction, Peter asked students to find alternative ways of solving the problem:

$$1 + 2 + 3 + 4 + \ldots + 100$$

Formulas were developed and tested on the following sequences:

$$1 + 3 + 5 + 7 + \ldots + 99$$
$$1 + 4 + 7 + 10 + \ldots + 100$$
$$1 + 5 + 9 + 13 + \ldots + 101$$

In this way students developed and tested formulas involving trinomials. In the second lesson, Peter asked students to work in groups on solving the Mystic Rose problem, the handshaking problem and finding the series of triangular numbers. After applying general problem solving principles, students eventually found the correct formulae (again involving trinomials). When Peter asked the class why they had done this lesson's work, one student replied that it was the same as the series they had been working on last lesson; they had made the connection. In the following lessons, Peter intended making the connections between this work and factorising trinomials. In this way, hopefully, the students would understand how this abstract algebra could be applied to real problems.

At Koala High School, Peter's practical knowledge was well developed, both within the school and within the school system. Peter applied for and received a promotion to AST3[5], which resulted in his transfer. Additionally, the maths resources Peter developed for years 7 and 8, with the help of some of his colleagues, were made available to all schools within the state by the Tasmanian Department of Education and the Arts (DEA). Peter knew where and how to seek support for this project, which was mostly his initiative.

Skills/Abilities

From my observations, it was obvious Peter's pedagogical skills were well-developed, yet still developing. Peter was always trying something new, working at the edge of his expertise. At Koala High School, in conjunction with developing the grades 7 and 8 maths resources, he was trialling new methods of delivery based on problem solving strategies. Peter was a confident teacher, opportunistic, flexible in his lesson delivery and able to easily cater for individual differences within his classrooms; he allowed students to work in groups or individually as they wished and to use concrete materials to aid understanding if they wished. Peter believed:

> *... that kids make meaning of their own personal experiences and you've got to somehow just facilitate a whole wide variety of experiences for those kids. ... I'm not a teacher, I'm a facilitator of learning.*

Peter's classes were work focused and his students on the whole were interested in learning; Peter encouraged his students to reflect and question. Minimal time was spent on off-task behaviour to allow for more learning; for example, Peter dealt with discipline matters in students' own time, not lesson time:

> *As far as I'm concerned, any disciplinary hassles are dealt with in the students' own time; learning time is not to be disrupted for dealing with behaviour things like that.*

Additionally, Peter quickly focused students on the lesson for the day. To aid him in this, Peter had established routines for lesson delivery:

> *I have a routine lesson plan, general lesson plan now I suppose which is to get attention, set the task, let the kids explore the task as an individual or in a small group, then reflect upon that task.*

Yet this lesson structure was flexible as

> *... that could happen over a period of two weeks for an extended task or it could happen a number of times in a lesson, those four phases could happen for a five minute mental arithmetic exercise. They always happen.*

Peter did not make detailed, written lesson plans; instead he generally developed a schemata for a lesson in his mind. In this way he was able to adjust the pace, structure and focus of the lesson when necessary in order to accommodate unforeseen interruptions, student questions/interests, and so on, but still meet the goals he had set for that lesson. For example, during a grade 9 Maths (mixed ability) lesson, Peter had students working at different levels on various exercises. When some students finished early, Peter set a word poblem on the board for them to solve. He spent four minutes explaining the problem to these students and discussing suitable strategies for solving it. Meanwhile, the rest of the class worked on exercises. Later in the lesson, when Peter noticed some students were having difficulty with the exercises (on algebraic equation solving), he got some Lego blocks from the resources room, wrote a Lego problem on the board for them and discussed solution strategies with them. Peter modified his lesson plan and introduced new questions and materials as necessary.

In every lesson I observed at Koala High School, Peter introduced the lesson, linking it to and recapping previous work and, similarly, concluded the lesson by bringing together the ideas developed during the lesson and indicating how these ideas would be developed further in the next lesson. These were established pedagogical routines for Peter.

Established routines also enabled Peter to effectively manage his classroom; repetitive tasks were automated. He relied on routines quite heavily and believed they were an imperative part of classroom management, but considered them to be:

> *... a fairly low level thing ... you don't want to spend time dealing with that too often. You want to spend your time on the high level tasks, actually looking at cognitive development, social development, all that sort of stuff.*

At the beginning of a lesson, to get attention:

> *I try now to use certain key phrases to do that which are the same all the time so the kids come to recognise them. [And] at the end of a lesson I like the kids to be sitting quietly so that I can tell them anything they need to do for homework, whatever. And that also provides for an orderly dismissal.*

Peter had developed established routines for classroom behaviour and discipline, and the students knew these. If a student was being disruptive in class, after having received a warning (which was also a warning to the whole class), Peter only needed to look at them and indicate with the motion of his hand to move, and they would immediately move their desk and belongings to an isolated area of the room. If they continued to be disruptive they were then promptly moved, desk and all, into the resources room behind the blackboard. The next step was removal from the class altogether. If the student's behaviour improved and they worked well, Peter would, after a while, allow them to return to their former position of full privileges within the class (one step at a time). These students would then know to wait to see Peter at the end of the lesson for discussion of their behaviour. Students exited from the class would need to negotiate their way back into the classroom.

At an administrative level, Peter worked well and effectively with parents and colleagues. In this respect, he was not scared to try new ideas and break new ground. For example, when introducing the new 7/8 maths programme at Koala High School, Peter felt it necessary to explain the philosophical underpinnings of it to the parent group, and as such arranged *coffee-shop* meetings with parents to do this. Also, in trialling the new materials, Peter organised the maths teachers to observe each other using the new materials and subsequent discussion aimed at professional development. Peter's promotion to AST3 level also demonstrated his ability as an administrator, as well as a teacher.

Peter is a highly reflective teacher; he continually assesses how his classes are progressing and his own teaching. He is highly critical of his own teaching and continually attempts to improve it. During my observations, at the end of each lesson, and sometimes during the lesson, Peter reflected with me on how the lesson had gone and what he could do to improve it. During his interview, Peter commented:

> *I try to reflect upon my practice. I really sort of do that every lesson. I don't have to document that, but to try and improve for the next time. So, I just see myself as undergoing continual professional self-development now.*

When confronted with problems, Peter reflects, bringing previous experience and knowledge to bear on the situation before deciding on a course of action. Peter's solutions to problems are appropriate and sometimes novel. For example:

> *There's one girl in [the 11/12 Physical Science] class who questions absolutely everything, which I think is great. Although sometimes, for instance, she's just questioning for the sake of being obstinate, but mostly they're pretty good questions. We've had a few occasions where we've looked at things like the law of conservation of momentum or some of Newton's laws or those sorts of things and ... I've said to them they shouldn't just be happy with what they can see in books or what people tell them, they should question it and base their judgments on physical evidence as well. And on quite a few occasions there's been things that she's refused to accept and ... I've just had to keep ... it's really tested me out because the first experiment I've got them to try hasn't necessarily convinced her and I've had to keep thinking of situations and arguments and stuff like that. And she starts from a certain point of view and I keep thinking of situations or getting her to do experiments that refute the point of view and gradually make her change her ideas like that. And it's been a long protracted process with a few misconceptions that she's had. But eventually I've got her to see most of the things, not just by telling her, by actually making her see that it really does happen.*

Personal Attributes

Personally, Peter seeks challenges; he is always working at the boundaries of his knowledge and skill, extending and enhancing them. He thinks he can always improve as a teacher, believing he is a good teacher, but perhaps not an expert teacher. He sets high standards for himself; "I used to want to be an expert, but I know that's not possible now. So now I see myself as a learner, I learn alongside the kids."

Peter is a confident teacher who loves teaching. When asked how satisfied he was with his job/career, he replied, "Oh very, I love it." He became a teacher in order "to make a positive difference for individuals and society."

Peter does not develop over-friendly relationships with his colleagues and students, but he does develop relationships based on respect, warmth and trust. Peter is warm and open when dealing with students and colleagues, but prefers to interact with them in a professional situation than a non-professional one. Peter is fair and empathic when dealing with people (students, staff or parents) and treats everyone as an individual in an unprejudiced manner. He does not like to have pre-conceived ideas of his students, or colleagues. When asked to describe his relationship with students, Peter replied:

> *I try to let them know that they're all important to me, their learning is important. It doesn't matter what level they're at. I try to give them all as much attention as they need. ... [I'm] not as formal as I used to be ... because I feel more in control of myself, then I think the relationship is more relaxed with the kids.*

Therefore, to a large degree, before his transfer from Koala High School to Echidna High School Peter fitted the prototype of an expert teacher. In the next section I describe what happened to Peter as a teacher upon transfer, and how his level of expertise was affected.

Transition Impacting on Teaching

Peter transferred to Echidna High School at the beginning of the second of three school terms for 1995, due to promotion to AST3. He transferred from Koala High School which caters for students in grades 7 to 12 (*ie*, ages 12 to 18 years) and is situated in an isolated rural community. Echidna High School caters for students in grades 7 to 10 (*ie*, ages 12 to 16 years) and is located in a major urban centre.

At Koala High School Peter taught grades 7, 8, 9 and 10 Maths and a grade 11/12 Physical Science class. All classes were mixed ability, except for grade 10 Maths and the Physical Science class, which were top stream classes. At Echidna High School in 1995 Peter taught grade 8 Maths (bottom stream), grade 9 Maths (bottom and middle streams), grade 10 Maths (bottom stream), and grade 8 Science (mixed ability). In 1996 Peter was timetabled onto the grades 7/8 programme and thus was mainly teaching grade 7 Science and Maths.

Impact of Transfer on Quality of Teaching

Prior to transfer, when asked how he felt about the upcoming transfer, Peter replied:

> *I'm fairly confident I'll be able to manage the teacher role. But I think I'll get worse to start with. There will be a little bit of take-up time there while I build relationships with the kids and work out the school structures. I think I'll spend more time on low level tasks ... just getting used to what the actual routines of the place are, and less time on high level tasks which I regard as dealing with kids' learning.* (10 May, 1995)

This was indeed the case after his transfer; for example, Peter had more difficulty managing his classes as his relationships with the students were ill-developed and his routines were not established, and thus less time was spent on the high-level tasks of learning and cognitive development. After his first day at Echidna High School Peter commented:

> *I thought I'd get a bit of a working over, but I thought I'd be able to stand at the front of the class and say, "Listen", and the kids would listen. And I was amazed when they didn't.* (20 June, 1995)

And, after one term at Echidna High School, Peter made the following comment:

> *I reckon I was offering nearly a Rolls Royce education where I was before, because I'd been there for so long and was so well entrenched and I didn't have to go through a lot of the hassles of building relationships because kids sort of knew my expectations early. The discipline wasn't a problem in the room. Then the other main aspect of teaching, the preparation was done. It fitted the context, it fitted the resources of the school and stuff. All my preparation fitted that. And so, I had individual kids making meaning and*

> *moving forward, making their own progress at their own individual level ... not all the time, but probably as much as you could expect to working within the constraints I had down there. Now, I'm not achieving any of that much at the moment in this place.* (17 July, 1995)

Many of the things which Peter felt were important as an educator, which were happening at Koala High School, were not occurring at Echidna High School. His overall quality of teaching definitely underwent at least initial vitiation; but did this apply equally to all dimensions of his expertise in teaching? Were some areas of his expertise in teaching affected more than others? And did he undergo concurrent renascence in any dimensions? In order to explore this issue, the following sections consider the impact of the transfer on Peter's teaching with respect to the three dimensions of the extended prototype model of the expert teacher.

Knowledge

Peter's knowledge of content and pedagogy did not vary upon transfer (indeed, how could it?). However, Peter's knowledge of the curriculum and of the practical sides of teaching at Echidna High School was not as strong as it had been at Koala High School as they were more context bound. Peter was knowledgeable about the Maths and Science curricula in general, but was not as *au fait* with the specific curricula for the classes he was to teach at Echidna High School. As he stated:

> *... coming into the school, picking up ... six new classes is very different from how I was operating at Koala ... where you'd teach something for a few years in a row, you never took on a whole heap of new things at once ... I've been thrown straight into preparing heaps of different stuff, and while some of the stuff I've pre-prepared works sometimes, it doesn't always work, and I'm having to prepare what fits the context that I'm in at the moment. So, I've been jumping around a bit, trying to use things I've used before, because I just haven't had time to prepare a lot of other good stuff for them.* (5 September, 1995)

Thus, initially, Peter's lesson plans were not up to his usual standard and involved more preparation as he came to grips with the new curricula (*cf* Borko & Livingston's "expert turned novice"). However, eventually, the experience of delivering six new curricula would broaden his knowledge of the Maths/Science curricula in schools and increase the resources he had for teaching those courses.

Additionally, Peter knew generally how Echidna High School worked, but still had to put time and effort into learning the new routines and procedures of the school; the low level tasks. For example, he had to learn a new discipline policy and determine who he could rely on to back him up regarding discipline issues, and how far he could go with those. As Peter stated:

> *I haven't quite sussed out exactly where everyone fits yet and it's hard to see how you can move forward until you find out where everyone's at, I think, so that makes it a bit difficult.* (17 July, 1995)

Peter was also taking on new responsibilities as an AST3 and had to ease his way into those.

Skills/Abilities

Peter's expertise as a teacher rested to some extent at Koala High School on his ability to focus students on their work and deliver quality lessons with little wastage of time on non-academic matters. At Echidna High School in 1995 Peter was unable to effectively implement his well-developed lesson structure of four phases and as such much lesson time was wasted on non-academic matters. Thus, even though Peter's lesson plans were still of very high quality, because his classroom management was more uncontrolled, their delivery was mitigated. As Peter stated at the end of second term:

> *... that phase that I told you wasn't ... really all that important [at Koala High School], getting attention, is actually vitally important I've come to realise, and I've had to use different ways of doing it.* [So]*... as far as using those four lesson stages, then taking action is really the only one that is happening at the moment, and they're not taking as much action as they should be.* (5 September, 1995)

Peter's teaching strategies were also causing him disciplinary problems. He was using pedagogical techniques and routines that the students were not comfortable with:

> *... and that's caused me a lot of hassles, at the moment, because it's mucking up the class management. It's so far away from what they're used to doing that they just go ape.* (17 July, 1995)

There was an obvious lack of fit between his pedagogies and the preferred learning styles of the students at Echidna High School. As he commented:

> *I'm sort of really fighting against just shoving the textbook in front of them. I know that's what they expect me to do. But, in the end, philosophically, I can't cope with that any more.* (17 July, 1995)

Many of the students were not interested in learning and were antagonistic towards Peter. So, even though Peter still tried to engender a work focused learning environment, he was not successful. For example, I observed a grade 9 Maths (middle stream) class mid-way through the first term after Peter's transfer. In my notes I made the comments:

> *2:37 Peter tries to get the class' attention, with some effort. The students keep talking. One student is exited from the class (another student had previously been exited). Peter is still waiting for their attention. Two more students are exited, then another. One exited student slams the door, Peter goes out to deal with it. When he comes back in another student is exited. Peter is still waiting for the students' attention.*
> *2:40 Peter starts to set the task. He has to discipline one more student. Then he gets one student to hand out the worksheets while he goes out to deal with the exited students.*
> *2:42 One exited student returns to say there were 7 of them out there. Another exited student returns. The students are discussing Peter's lack of control; a few are getting down to work.*

Peter is still dealing with the exited students until 2:51 when he returns to class to assist students with the worksheets and monitor their behaviour.

At Echidna High School, Peter felt, "Kids do not operate in the way that I would like them to. They show little initiative and little desire to learn" (5 September, 1995). However, he also felt that it wasn't a school-wide thing, he didn't think it was a part of the school culture. He thought it may have been a function of the low level classes he was assigned. Partly because of this, Peter still developed lesson plans (mind-maps) which catered for individual students. For example, in all of the lessons I observed, Peter focused on those students who wanted to learn (ignoring the rest unless their behaviour was disruptive) and designed individual programmes and activities for them suited to their preferred learning styles and abilities. Peter emphasised practical, hand-on activities. In several classes different groups of students were observed doing up to 5 to 8 different activities.

In his teaching at Koala High school, Peter had employed an effective disciplinary routine. However, upon his transfer to Echidna High School, Peter was unable to employ this routine; the students were not familiar with it. Peter had expected this; before his transfer, he stated, "I think I'll have more trouble handling the classes" (10 May, 1995) at Echidna High School. One month after transfer, he stated:

> *I'm still trying to catch up with what happened in first term ... They've set their routine and they're trying to make me fit their routines, and I'm trying to do the opposite. So, what is it? The irresistible force and the immovable object at the moment.* (17 July, 1995)

As the term progressed Peter felt he was able to manage his classes better, though never to the degree he had managed them at Koala High School.

> *But, after a month, oh things have improved. I mean some kids know they should sit and work quietly and they are expected to do something. If they don't do something there will be consequences for it, but I can't impose consequences on all the ones that I'd like to because it's just overwhelming. So, that's a bit of a hassle.* (17 July, 1995)

Peter spent more class time disciplining students at Echidna High School, therefore, less learning was occurring. At the end of the term, he stated, "... the kids are starting to take just a little bit more

notice of me in a discipline way because they know I've been following kids up" (5 September, 1995). He was starting to develop a reputation. However, he later added:

> *Discipline is a real problem. ... we're still sussing each other out. They're starting to get some idea of my expectations, but the way they're acting is so far away from the way I thought they should be acting that we're all just getting frustrated at the moment.* (5 September, 1995)

Peter believed he had "hit a wall" and would now make no further progress until he started with new classes the following year.

> *I've just got to make sure I'm sane at the end of the year and ready for a fresh start next year with new groups that I think I can achieve something with.* (5 September, 1995)

At the end of term, Peter stated that adapting to Echidna High School was forcing him to be more reflective. He reflected a lot on how to better handle his classes, improve his teaching, establish relationships with the staff and students, and generally begin to fit into the school. In interview he commented:

> *I still reflect, but I'm reflecting about different things I suppose. Before I was reflecting about the fact that things were going fairly well and ... how could we really put the icing on the cake. Now, I'm just reflecting about how can I even get to first base, so that things are actually going to operate reasonably well.* (5 September, 1995)

Peter continually reflected on his practice and the needs of the students, trying out different teaching strategies and lesson structures to try and interest them in learning. Also, his teaching was still flexible and opportunistic, he responded to the problems he faced and attempted to solve them in the light of his intuition, previous experience and knowledge. For example, upon realising that he wouldn't be able to get the whole class' attention at the beginning of a lesson, Peter began to work with individuals and small groups at the beginning of each lesson, setting each student or small group of students to work on an activity or exercise one at a time. In this way he got the class settled down to work, but it sometimes took him half the lesson to get to that point. However, Peter was no longer as confident in his teaching or as successful furthering students' learning; for example, Peter commented, "I'm questioning my ability to handle whole classes a bit more at the moment, I suppose" (5 September, 1995) and, "sometimes I don't think I give kids perhaps enough busy work" (5 September, 1995)

Upon transfer, Peter felt he had been, "shoved in a time machine and shot back six years or so to what things used to be like" (5 September, 1995), to a time when he was still a novice/advanced beginner teacher, as he had to re-evaluate things about his teaching and education in general which he had previously thought through.

Personal Attributes

Peter welcomed the challenges that Echidna High School and the transfer presented. He continued to work at the boundaries of his knowledge and within his philosophies. However, he was no longer as confident in his abilities, his positive self-image was taking a battering, he had lowered his standards, and he was no longer as satisfied with his career. Peter believed, however, that his job satisfaction at Echidna High School would improve over time, especially when he started next year with new classes.

> *I don't perhaps look forward to going to work as much. I'm perhaps not feeling like I can fly, the kids can fly as much. Perhaps my expectations aren't quite as high ... I perhaps don't think it's possible to reach for the sky at the moment. I can't even climb on top of the roof. So, that's altered a bit. Perhaps job satisfaction, of course, is down a bit. [However], I'm not completely in the depths of despair ... I think, eventually, things will turn, but it's just not crash hot at the moment.* (5 September, 1995)

Peter was far less satisfied with his role as teacher at Echidna High School than he was at Koala High School. One day after transfer, he commented that for this first time in his teaching career he had not felt like coming to school on the second day, because his first day at Echidna High School had been so difficult. One month after his transfer, Peter similarly stated:

> *I'm not quite as enthusiastic. I still really believe that schools can make a difference and in the end I'll probably be getting somewhere, but just on a day by day basis, I'm just finding myself starting to switch off a bit because, I suppose, it's continual negative reinforcement. ... I don't look forward to turning up for work as much as I did at Koala.* (17 July, 1995)

And, one term after his transfer, Peter commented, "it's probably the least effective term I've had in my whole career ... even when I was a first year teacher" (5 September, 1995) and "I've had to adjust my expectations. I suppose I thought I was going to be wonderful, but I'm not, with the classes, I mean, as a first move as a teacher" (5 September, 1995).

Peter employed several strategies to help him make it through his first term (and year) at Echidna High School. Mainly, he concentrated on his "little successes". As he stated:

> *While I wouldn't say that I'm happy with any one class ... I don't think I've got any one class really going for it, but there's little individual things starting to happen, and I've just got to take them as the pluses at the moment and aim for a good start next year. That's my aim at the moment.* (5 September, 1995)

This proved to be true; in 1996 Peter did make a fresh start, with mainly grade 7 classes and was immediately back on track to re-emerge as the expert teacher he had been at Koala High School before his transfer. With these grade 7 students he was able to establish his routines and expectations and to develop warm and productive relationships with the students right from the beginning of the year. It was of significance that they too were new to the school. He was also able to rely more on the resources he had developed at Koala High School.

In 1995 at Echidna High School, Peter had not developed good relationships with his students; quite the opposite in some cases.

> *I've got very little rapport with the larger classes, especially ... they think I'm just a fill in, a relief teacher, because they've already had two teachers before I got there and they think I'm just another fill in. And, they've just got a bit 'cheesed off' with it, basically. So, I'm not achieving many things. There's no working environment in the classroom like there should be. [And] it's just a pity that the personal relationships within the room aren't better ... they just don't allow anything of much quality to happen in most of the classes.* (5 September, 1995)

The students with whom Peter has most difficulty are those who show no respect for other people or for themselves. Peter's one basic rule is: "You should respect other people and the environment, generally" (10 May, 1995). After transfer, Peter stated:

> *What I think has really struck me is the kids have very little respect for other people, including adults, and their respect for the surroundings and the environment is just virtually nonexistent. ... Respect, had it at the last place, haven't had it for most of the time at this place from the kids.* (5 September, 1995)

Peter felt he was in continual conflict with his students at Echidna High School and twice used the analogy of war to describe his relationship with them. Peter was still fair, unprejudiced and empathic with his students, but had not yet established the trust and respect he needed to be an effective teacher. His students had not yet developed responsibility for their own behaviour and learning, as Peter had achieved with his students at Koala High School.

At Echidna High School, Peter initially felt a bit estranged from the rest of the staff, especially the maths staff.

> *Now I could be wrong here, I might be ultra-sensitive, but I just get the impression they're just checking me out for a while to see if I'm going to sink or swim.* (20 June, 1995)

One month after transfer Peter felt, "the staff are still sussing me out, and I'm still sussing them out" (17 July, 1995). However, as the term progressed, Peter began to feel more comfortable with and accepted by his colleagues, "I'm getting on better with the staff" (5 September, 1995).

Thus, overall, upon transfer, Peter had retained his expertise in several sub-dimensions, but on the whole his level of expertise *took a battering*; that is, it was vitiated, diminished, lessened.

Conclusion

Peter was an expert teacher at Koala High School, expert in each sub-dimension of the prototype model outlined in this paper. Upon transfer to Echidna High School, initially at least, Peter's expertise was mitigated by the context of the new school, particularly the culture of the students. For the remaining two terms of 1995, Peter battled with his classes to establish excellent teaching practices and promote quality learning with his students. In some respects Peter remained an expert teacher, in others he regressed along the novice to expert continuum.

With respect to the dimension of knowledge, Peter remained expert in the sub-dimensions of content knowledge and pedagogical knowledge. In fact, Peter's pedagogical knowledge was gradually extended as he attempted to find new ways of gaining the students' interest. However, Peter's expertise in the sub-dimensions of curriculum knowledge and practical knowledge was lessened due to the different context; though eventually, given time, both would expand as Peter learnt more about the curriculum and operation of Echidna High School.

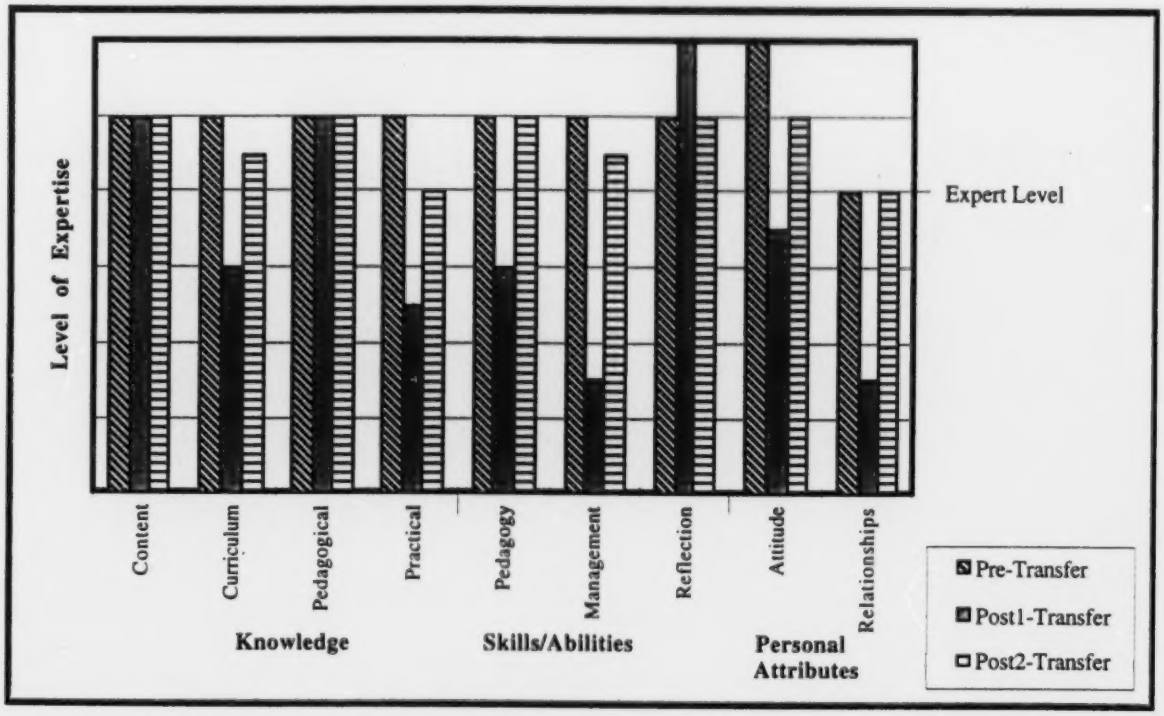
With respect to the dimension of skills/abilties, Peter remained expert in the sub-dimension of reflection/problem solving, and in fact, was called upon to use these skills continually. The sub-dimensions of pedagogy and management for Peter were affected in many ways by the transfer. In some senses he remained an expert pedagogue and manager; for example, in his flexibilitiy, concern for individual differences, opportunism, mind-mapping of lessons, sensitivity to task demands, and adaptability to practical constraints. However, in other respects Peter's expertise in pedagogy and management suffered terrible setbacks; for example, his confidence, routine establishment. emphasis on work, fluidity, engenderment of successful learning, clear and coherent lesson structure, maximisation of learning time, and automaticity of repetitive tasks. Peter was not able to begin to re-establish expertise in these areas until 1996 when he started the school year with new classes.

With respect to the dimension of personal attributes, again the two sub-dimensions of attitude/disposition and relationships were affected in many ways. Peter's expertise remained intact regarding his disposition towards seeking challenges, and working at his boundaries; and regarding his relationships, his sensitivity to social situations, fairness, lack of prejudice, and empathy. Peter's expertise, however, waned with respect to his disposition towards career satisifaction, confidence, positive self-image and setting of high standards; and regarding his relationships, his emphasis on responsibility and respect.

Therefore, upon transfer, Peter's expertise as a teacher underwent vitiation (relapse) in several sub-dimensions of the model. He was no longer the expert teacher he was at Koala High School in those two terms of the 1995 school year he taught at Echidna High School, even though he was still expert in some sub-dimensions. He had regressed along the novice to expert continuum. However, his expertise as a teacher did begin to undergo renascence as he began the 1996 school year at Echidna High School. Peter's knowledge of the curricula was comprehensive as he was only teaching grades 7 and 8, and his practical knowledge of the school was more extensive. He was beginning to re-establish his routines, focus the students on work and devote nearly all of the lesson time to learning. As a consequence, he was becoming more satisfied with his teaching, setting high standards for his students and regaining confidence in his abilities. Peter was providing quality learning tasks for his students which were enacted upon by them; quality teaching and learning was once again occurring in Peter's classrooms.

The changes in Peter's levels of expertise can be illustrated by the diagrams in figure 1.

Figure 1: Illustration of Peter's Changing Levels of Expertise



How generalisable this story is is open to debate and a question I am pursuing in my research. Here is one case, however, that supports Berliner's hypothesis that expert teachers would have problems transferring their expertise to a new context, in this case, a new school. A mitigating circumstance in this case was that Peter's transfer occurred part way through the school year.

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[1] All names of teachers and schools are aliases.

[2] It can be assumed that an expert teacher would demonstrate quality teaching; however, teachers exhibiting quality teaching need not necessarily be expert teachers - they may not be working at the leading edge of their abilities, pushing the boundaries.

[3] The Australian school year goes from February to December.

[4] Other colleagues of mine have concurred with me on this point.

[5] An AST is an Advanced Skills Teacher, with levels 1, 2 and 3. The AST structure is implemented differently in the various Australian states. In Tasmania, AST1 is not a promotable position, but AST3 is. AST2s are not found in secondary schools, only primary schools. ASTs take on extra administrative responsibilities. AST1 responsibilities are usually subject area focussed, while AST3 responsibilities are more often school-wide. For example, an AST1 may be responsible for assisting practicum students, whereas an AST3 may be responsible for professional development of teachers across the school.